Less is More
Antimicrobial Stewardship in Long-term Care (LTC)

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Image credit: Public Health Ontario, 2016
Objectives

What is the problem?

What is the solution?

How can you take action?
up to 78% of residents will receive at least one antibiotic course in a single year
50% of antibiotic courses are unnecessary
Duration of Antibiotic Therapy in LTCH

62.6% of courses are over 10 days

20.9% of courses are over 90 days

Antibiotic Use in Ontario LTC Homes (LTCH)

77,000 residents

4620 residents currently receiving antibiotics

2310 are receiving unnecessary or inappropriate therapy right now

30,000 receive unnecessary or inappropriate therapy every year

Image credit: JakeOlimb/Getty Images
Top 3 Reasons for Antibiotic Use in LTCH

• #3 Skin/Soft Tissue
• #2 Respiratory
• #1 Urinary
Extreme Variability of Antibiotic Use in LTCH

Antibiotic Days/1000 Resident Days

10X Variability

Drivers of Antibiotic Prescribing in LTCH

- Knowledge
- Social Influences
- Environmental context
- Risk-Benefit Assessment

Image credit: PeopleImages.com, Kaan Ates/Getty Images
Antibiotic Resistance: “Not my problem”

Most clinicians have heard of antibiotic resistance and believe it to be serious.

However, most think it is caused by other countries or health care settings.
Consequences of Antibiotic Use

↑ Adverse effects

↑ *C. difficile* infection

↑ Antimicrobial resistance

↑ Cost to health care system

↑ Mortality
Extreme Variability of Antibiotic Use in LTCH

24% Increased Risk of Harm

*C. difficile*, adverse effects, diarrhea, antibiotic resistant organisms

Why should we care about antibiotic overuse?

![Antibiotic pipeline is running dry](image.png)
What is the solution?

- Antimicrobial Stewardship
- Reduce Patient Susceptibility
- Infection Prevention and Control
- Reduce Patient Colonization
- Environmental Cleaning
- Reduce Environmental Exposure
- Antibiotic Resistance
What is antimicrobial stewardship?

Optimal Antibiotic Use

- Cure Infection

Avoid

- Adverse Effects
- *C. difficile*
- Antibiotic Resistance

Image credit: nambitomo/Getty Images
What is antimicrobial stewardship?

“coordinated interventions designed to improve and measure the appropriate use of [antibiotic] agents by promoting the selection of the optimal [antibiotic] drug regimen including dosing, duration of therapy, and route of administration”

Fishman N. Policy statement on antimicrobial stewardship by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS). Infection Control & Hospital Epidemiology. 2012 Apr 1;33(04):322-7.
An antimicrobial stewardship program has been implemented. (major)

The program specifies who is accountable for implementing the program. (major)

The program is interdisciplinary, involving pharmacists, infectious diseases physicians, infection control specialists, physicians, microbiology staff, nursing staff, hospital administrators, and information system specialists, as available and appropriate. (major)

The program includes interventions to optimize antimicrobial use. (major)

The program is evaluated on an ongoing basis and results are shared with stakeholders in the organization. (minor)
US Centers for Disease Control and Prevention

Core Elements of Antibiotic Stewardship in LTC

Leadership

Support

Education

Accountability

Drug Expertise

Tracking:
Monitoring antibiotic use and resistance

Reporting:
Information to staff on antibiotic use and resistance

Actions to Improve Use

How can you take action?
Antimicrobial Stewardship Strategy: Preventing treatment of non-infectious conditions

Stewardship interventions that target specific situations when antimicrobials are not indicated or frequently prescribed, to help decrease unnecessary antimicrobial therapy for non-infectious conditions.

Description

This is an overview and not intended to be an all-inclusive summary. As a general principle, patients must be monitored by the health care team after changes to therapy resulting from recommendations made by the antimicrobial stewardship team.

Clinicians are often faced with the challenge of identifying whether an infection is present when the diagnosis is not straightforward. This may include situations where non-infectious conditions exhibit symptoms also seen in infectious illnesses, or when a microorganism is isolated from a patient with no signs or symptoms.

Unnecessary antimicrobial prescription may be due to either uncertainty or fear of missing a diagnosis or misinterpretation of microbiology results. Examples of the former include acute exacerbations of chronic obstructive pulmonary disease, drug fever and sepsis resembling other conditions. Examples of the latter include asymptomatic bacteriuria, contaminated blood cultures and colonization of wounds without signs of infection.

These may lead to concerns about disease entity or appropriateness of empiric antimicrobial treatment.
How can you take action?

- Don’t treat non-infectious conditions
- Re-assess empiric therapy
- Reduce duration of treatment
Don’t treat non-infectious conditions
Bacteriuria is common in LTCH residents
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Bacteriuria is common in LTCH residents
“Don’t use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present.”

# Asymptomatic Bacteriuria – ASP Strategies

## Multi-pronged approach to reducing unnecessary urine cultures:

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# The Do’s and Don’ts for Urine Samples in LTCH

## Do

- Obtain urine cultures only when residents have the indicated clinical signs and symptoms of a UTI.
- Obtain and store urine cultures properly.
- Prescribe antibiotics only when specified criteria have been met, and reassess once urine culture and susceptibility results have been received.

## Do NOT

- Do NOT use dipsticks to diagnose a UTI.
- Do NOT perform routine annual urine screening and screening at admission if residents do not have indicated clinical signs and symptoms of a UTI.
Re-Assess Initial Antibiotic Therapy
ONE THING YOU CAN DO TODAY TO IMPROVE ANTIMICROBIAL USE

REVIEW ALL ANTIBIOTIC ORDERS WITHIN 72 HRS

Within 72 hours, review laboratory/diagnostic data and patient clinical status to assess:

A. If the antimicrobial can be stopped (no evidence of infection)
B. If the antimicrobial should be changed
C. If an IV antimicrobial can be switched to oral
D. The duration of therapy or next reassessment date
Re-Assess Initial Antibiotic Therapy

Often antibiotics are started before all information is obtained

A “time-out” at 48-72 h is recommended to re-assess the situation

- Stop antibiotics?
- Streamline therapy?
- Escalate therapy?
- Re-assess duration?
Reduce Duration of Antibiotic Therapy
ONE THING YOU CAN DO TODAY TO IMPROVE ANTIMICROBIAL USE

OPTIMIZE THE LENGTH OF TREATMENT

For many infections, data supports shorter treatment durations:

- **5-7 DAYS** Community-acquired pneumonia (mild to moderate)
- **5 DAYS** COPD exacerbation (mild to moderate)
- **7 DAYS** Acute pyelonephritis/septic UTI (without urogenital abnormalities)
- **5 DAYS** Erysipelas or uncomplicated cellulitis
  *If responding by the fifth day*
Reduce Duration of Antibiotic Therapy

Another way to reduce patient exposure

Dispel the myth: shorter duration = more resistance

Wide variability in prescribing practices in Ontario, linked to prescriber rather than patient characteristics

Uncomplicated urinary tract infections (UTI) in elderly females can be treated for as short as 3 days
Conclusion

• Antibiotic overuse is common in Ontario LTCHs
• Antibiotic use is a driver for antibiotic resistance, one of the world’s most pressing public health threats
• Antimicrobial stewardship can help to reduce the negative consequences of antibiotic use in LTCH
• 3 key messages for antibiotic stewardship in LTCH:
  • Don’t treat non-infectious conditions
  • Re-assess empiric antibiotic therapy after 2-3 days
  • Reduce duration of antibiotic therapy
Stay Tuned

- PHO’s **Antibiotic Resistant Organism Survey** for LTCHs
- Estimates the burden of AROs in LTCH
- Questions about IPAC practices
- Questions about antibiotic stewardship practices
- Coming in Spring 2017!
Thank You!

Questions?

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References


